

- f) while processing said merged data to produce output data, simultaneously capable of accepting and processing new User Form Data from ~~the identical said at least one Client~~, reception of said new User Form Data with identical Unique Identifier causing present execution of simulation method to be aborted and associated resources freed in favor of processing of said new User Form Data, ~~Where such replacement data is received, step g of the present first simulation method instance is not executed. If no such replacement data is received, processing completes and step g is executed.~~

- g) transmitting said output data to said at least one Client.

16. (currently amended) ~~The computer-network method of Claim 1 with the additional ability to execute a plurality of simulation method steps c-f from a single Client concurrently, said plurality being reduced to a single simulation method by aborting all but the method steps corresponding to the last submitted Client User Form Data.~~

REMARKS-General

Regarding "Information Disclosure Statement" in the Office Action mailed 7/15/2004, a statement was belatedly filed 10/22/2004 with the following statement attached:

Please find attached a statement belatedly filed to accompany an information disclosure (PTO/SB/08a) filed 5/6/2004 for pending application 09/287,478, per 37CFR1.97(c)(1) and 37CFR1.97(c)(2). A good faith attempt was made to comply with Section 1.98, but the applicant was unaware of the necessity of an accompanying statement.

The applicant requests that this additional time be granted to enable full compliance.

Therefore, it is believed no fee was or is necessary. Please note that a second IDS has been filed since with the appropriate statement.

With regards to the amendment to the specification beginning "instructions such as Java Virtual Machine bytecodes...", the intent was to correspond with a modification made to Claim 1 (now deleted), which also referred to Java and was previously referenced in the Brief Summary ("The growing availability of HTTP-compatible software such as "web browsers" and Java"), Fig. 4L, and elsewhere. In fact, Form Structure Data was explicitly introduced in the Brief Summary as "... Form Structure Data (in HTML, Java, etc.)..." in the definitions, however, the definition of Form Structure Data did not explicate the use of Java, which was an oversight. It is important for clarity that Claim 1 clearly reference both HTML-type and programmatic-type (e.g., Java) sources of "Form Data".

Therefore, the expanded definition of "Form Structure Data" has been deleted as required, but for clarity a new, more intuitively named definition has been added, "Form Creation Data", the definition of which includes "Form Structure Data" as well as form creation using Java. All claims have been updated to refer to "Form Creation Data".

With regards to the S112 objection, "such as" and "etc.", this entire clause has been removed and explanatory material placed in the new definition "Form Creation Data". As discussed in our November 2004 interview, it is acceptable to refer to definitions from the body of the Specification in claims. With regards to Claim 15, the phrase "the identical Client" has been replaced with "said at least one Client".

With regard to the S112 objection by the Senior Examiner during the interview, Claim 1 has been entirely rewritten as a pure method patent, and all subsidiary claims have been converted to method patents.

With regard to the S103 Claims Rejections:

The strongest, most general arguments for non-obviousness are the size of the electronics industry (multiple 100's of billions of dollars in 1997) and the high visibility of the internet in 1997. Netscape went public in 1995, CNET went public in 1996 with a market cap of US \$403M. There was no shortage of scrutiny in any market for possible web applications and the electronics industry is one of the most competitive industries in the world. This Lack of Implementation points to an Assumed Unworkability, which applicant posits as a possible failure to appreciate the cumulative increase in performance of mainstream CPUs, coupled with a widely held underestimation of the potential of the WWW for client-server interaction. Even if prior art can be found within the realm of traditional client-server systems, use of the internet to deliver similar functionality is clearly a New Principal of Operation, requiring substantial innovation.

Regarding Claim Rejections, "as per claim 1":

Van Huben does not disclose an integrated method to enter design information, merge that information with other data, process the data and then automatically prepare a result for web Browser use. It would appear Van Huben requires an additional export step.

With regards to the use of the phrase "Unique Identifier" (UI) in Jenkins, it is applied there to the components, not to a User, and Jenkins instead mentions storing a User Profile in cookies, presumably from a initialization step, a step not required by the present invention where the Unique Identifier can be automatically and anonymously assigned. The use of this stored profile is apparently used to customize HTML template data, a different art from customizing circuit template data. The very nature of a customized "user profile" would tend to imply that the intent of Jenkins' UI is primarily to cache a login. There is also no suggestion of using such a UI in managing Server resources or state, or other uses disclosed in the present application.

PATH_INFO/EXTRA and cookie mechanisms for maintenance of state in an HTTP/HTML session constitute prior art for the present invention, as described in "CGI Programming on the World Wide Web", which has been included by reference in the present application. However, WWW programming in general was a less-mature art in the April 1997 time frame and in particular CAD/CAM software that made primary use of a web browser interface (HTML or Java Applet with default privileges) was nearly non-existent. For example, "CAD" and "web browser" do not show up together in a simple search until Faybishenko (5,757,925, filed July, 1996). Consequently CAD/CAM and web application software development constituted nearly completely separate arts in the 1996-7 timeframe, and the existence of someone skilled in both arts is a hypothetical. Indeed, to this day, the vast majority of CAD tools typically utilize connections with state, such as continuous TCP/IP. To a degree, Van Huben (5,950,201) unconsciously illustrates a widely held misconception at that time of the web as suitable only for delivering static documents and simple calculations, in that his disclosure relegates web access to just retrieval of "process and pseudo-process results". This is a deficiency he corrects in a subsequent application filed approximately one year later (but after the demonstration date of the present invention).

From the web technology viewpoint, it would seem that both Jenkins and the cited references for Montulli (6,134,592, filed Aug. 1997; but also 5,774,670, filed October

1995) envision cookies as a means to avoid the complexities of keeping client state on the server, or in generated web pages, not as a means to index complex server state.

With regards to "As per claim 2", the point of this is to teach that the Unique Identifier and Form Data need not be repeatedly sent in the present invention. Since examiner agrees van Huben doesn't disclose a "Unique Identifier", this citation does not appear to be appropriate.

With respect to "As per claim 3", this claim depends for its novelty on lower numbered claims. (See additional note at reply to Response to Arguments)

With respect to "As per claim 4-6", there is no requirement in the present invention to "login to a network server" as described in Jenkins; the "Unique Identifier" may be assigned without any login.

Van Huben discusses checksums and CRCs within the context of "Library Processing Phase files", pedigree files, archived file identifiers, etc., but not in the context of user identifiers. A better reference with regard to checksums of identifiers would appear to be Bachman, et al (5,907,621), although Bachman embeds the token in the web page, rather than in a cookie or PATH_INFO/EXTRA. In addition, since the examiner concedes in the Office Action that the Unique Identifier is not taught by van Huben, it cannot then be said to be "randomly generated with high fidelity or with high reliable probability".

Claim 4 depends for its novelty on previous claims, and with regards to claim 5, neither Jenkins nor Van Huben talk about the management of temporary files, specifically with regards to a Unique Identifier.

With respect to "As per claim 7", account limits exist in traditional operating systems (i.e. Unix, etc.), and presumably in some client-server CAD systems in the prior art, but did not in contemporary web-based CAD tools, to the best of the applicant's knowledge.

Certainly the simulation usage limits disclosed are not found in either Van Huben or Jenkins. Please note that claim 7 has been restructured as a purely method claim in accordance with instructions from the interview.

With respect to "As per claim 8", van Huben does not teach lowering of process priority based on usage. Van Huben's resource/attribute tables appear directed at preventing deadlock by enabling or disabling entire processes according to resource availability, rather than adjusting process priority.

With respect to "As per claim 9", van Huben does not mention circuit synthesis (this was part of Burrows ('117)). In any event the novelty of claim 9 is from the synthesis of a circuit that is turned into Form Creation Data for input to Claim 1. Please note that for clarity an extra "Circuit Synthesis" has been inserted before "Form Data" in 9cc.

With respect to "As per claim 10", van Huben (201) col. 18:20-25 refers to BOM email status, and col. 23:17-49 refers to a Data Manager establishing accounts and privileges associated with those accounts which actually teaches away from Claim 10, since one of the avowed benefits of the present invention is the elimination of a requirement for a "Data Manager". The present invention newly solves the different problem of anonymous, unmanaged use of a simulation tool. This paragraph in van Huben actually contrasts quite strongly with the intended use of the present invention. 6:54-27 again emphasizes data management over the internet and the execution of "batch jobs", but not anonymous, automatically managed interactive simulation.

With respect to "As per claim 11", the privileges described herein need not be assigned by an account manager. These privileges may be derived by domain, from a "ticket" (perhaps stored in a cookie by another process), or by means of the link the user used to reach the first interface page, etc.

With respect to "As per claim 12", while van Huben does disclose methods for operating across a TCP/IP network such as the internet, he does not disclose methods for management of state using a stateless (i.e. HTTP) connection medium. His discussion of WWW/Internet access focuses on retrieval of job status of previously initiated processes, and although "authorized users" can manually initiate DILPs (library processes), the results must apparently be retrieved as a separate step and does not constitute a system for anonymous, automatically managed interactive simulation.

With respect to "As per claims 13" and "14", Jenkins mentions chemical analysis but nowhere mentions anything "electrical" or "circuit" or "simulation". Debugging is a Non-Analogous Art to simulation. Cookies are but one means to the storage of a Unique Identifier (Jenkins does not discuss PATH_INFO or PATH_EXTRA for example), and in any event the importance lies in what is stored and how the stored data is updated, not how it is stored.

With respect to "As per claim 15" col. 9, line 41 to col. 10, line 20 discusses the typical architecture under which the IBM DCS runs. Lines 22-53 discuss related issues such as redundancy, backup, performance and caching, but in particular, lines 31-33 discuss transferring only control information and using pointers to keep files where they belong, relevant but van Huben does not teach here about transmitting Form Structure Data to an HTTP client, or its equivalent. Van Huben does not actually mention simulation as a explicit function of the DCS and he only mentions simulation twice, both times (col. 17 line 63, col. 21, line 63) in the context of BOM components of a model, in keeping with the primary thrust of van Huben which is meta-management of data and processes. With regard to "...template data to generate a design repository..." , the phrase has been changed to "simulation template data", so this citation is no longer relevant.

With respect to "As per claim 15" and "Processing said merged data to produce output data, wherein..." , van Huben's claim to internet support appear modest, col. 28 lines 11-39, (Section 1.18):

WWW/Internet Access (Section 1.18)

The DCS provides a mechanism which permits access to all process and pseudo process results through the World Wide Web. Key quality control indicators can be exported out of the DCS into an accessible format by users on the WWW. Usually these results would exist in a secure repository which could only be accessed by WWW users who are working on the project. This same mechanism can be used for network access in general, including the extranets, intranets, and the internet. In addition to accessing information, the ALMs can receive special e-mail requests from users to perform these tasks:

Generate various status reports on topics such as PN-EC and Design Fix Tracking, Process & Pseudo Process Results, or BOM information. The DCS would generate the report on the fly and return it to the user's Internet or e-mail address.

If the user has the proper authority, he can submit e-mail requests to add pseudo-process information into the DCS. The contents of the mail would contain a specifically formatted command which the DCS can interpret to set the appropriate results. This could be used by people remotely connected to a project (such as the chip foundry) to send status information directly to the DCS.

The DCS permits an authorized user to send commands through the Internet Common Gateway Interface (CGI) to query information from the DCS or invoke Designer Initiated Library Processes (DILPs).

The center two paragraphs are focused focus and as such are not immediately relevant, and only the first and last paragraph implying/mentioning access by browser. The most relevant likely connection to the present application is through the initiation of DILPs, but the heavy emphasis on email seems to imply that "access to all process and pseudo-process results" is of text status, and even then, that there is no unified method disclosed for input configuration to output results. Indeed, a separate export step is required, and then presumably a further step to retrieve the exported results.

With respect to "As per claim 15" and "While processing said merged data to produce output data, simultaneously..." , van Huben mentions "abort" in the following example contexts:

- "...aborted library operations due to system problems...";
- user selected "option to continue or abort the operation", during promotion;
- Program aborting due to a CRC mismatch;
- Program aborting due to Process Name mismatch.;
- User selected "opportunity to abort the check out" on locked files;
- User selected "opportunity to abort" a BOM deletion or invalidation;
- "error occurs which notifies the user and aborts, the program",
- etc.

Since there is no specific citation and the references to simulation are in passing and all references to abort have to do with system or user errors, there does not appear to be any reference in van Huben (201) to aborting / restarting a process in response to new user resubmitting a similar job. Indeed, the expectation for batch-style use would be that each process would normally run to completion in sequence, then the user would have to manually select and export the final results.

With regards to "As per claim 15" and "transmitting output data to said at least one Client", the discussion of the Unique Identifier is a non sequitur. However, it should be noted that Jenkins describes the use of cookies to store a user profile, presumably saved from an earlier login. The association to "User Ids" is not taught. The use of the phrase "Unique Identifier" in Jenkins pertains to uniquely identifying components that Jenkins assembles into a program.

With regards to "As per claim 16", applicant does believe it is possible for a single user of the IBM DCS to initiate multiple simultaneous processes, but as there is no attached citation, and a search for keywords could not find any discussion of automatic

elimination of multiple simulations or other processes and for reasons cited previously under "As per claim 15," it is believed this argument is erroneous.

As regards Response to the Arguments: "In response to applicant's argument that there is no suggestion of using such a UI in managing server resources..." , applicant has modified claim 1 and 15 so that such purposes are explicitly claimed.

As regards "In response to applicant's argument about the novelty of claim 3, neither claim 2 or 3 specifically claim graphic rendering which could be novel, in light of Transim patent 6,530,065.

As regards "In response to applicant's argument that there is no suggestion that the Unique Identifier is associated..." see above (first reply to Response to the Arguments) regarding modification to claim 1.

As regards "In response to applicant's argument neither Van Huben nor Jenkins discloses CAD application and CAD simulation in a computer network, and simulation count limits", the response was with respect to automatic limitation by simulation count or usage, which is different from traditional managed accounts under Unix and the like where a CPU or other limit must be specified by an account manager. New accounts may have a default setting, but no accounts at all need be established to use the present invention. As we note above, the lack of a need to create an account to run a simulation is a key feature of this invention.

Appl. No. 09 / 287,478
Amend. Dated: Dec. 16, 2004
Reply to Office action of July 12, 2004, mailed July 15

Amendment E

Conclusion:

We continue to hold that the present application solves a Different Problem from any of the references attached in the office action and moreover that the field is a Crowded Art in which the methods disclosed are a significant advance over what came before. In particular the dynamically and automatically assigned, transient Unique Identifier in the managed public use of simulation systems is a New Principle of Operation for such systems.

In particular, we feel that the van Huben patent, while comprehensive in its own domain of library management and batch control of a CAD environment with traditional administrator-assigned accounts, actually Teaches Away from the present invention which has the different focus of interactive public simulation.

At the time of conception, there was a widespread Assumed Unworkability in interactively controlling server CAD simulation from an HTTP-based internet client. This, plus the non-obviousness of the disclosed methods, explain a Lack of Implementation of simulation tools prior to the advent of the present invention.

Conditional Request for Constructive Assistance:

The applicant has amended the Background and the Claims so that they are proper, definite and define novel methods which are also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestion of the Examiner pursuant to M.P.E.P. S2173.02 and S707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Appl. No. 09 / 287,478
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Amendment E

Very respectfully,



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